CLAIMS READABLE ON THE ELECTED SPECIES

1. A medical device comprising a polymer comprising a group of the formula:

$$-[-(R^1)_n-(-Z-(R^2)_m-)_p-(-Si(R)_2-V_r-)_s-]_q-$$

wherein:

n = 0 or 1;

m = 0 or 1;

p = 1-100,000;

r = 0-100,000;

s = 1-100,000;

q = 1-100,000;

R^1 and R^2 are each independently a saturated or unsaturated aliphatic group, an aromatic group, or combinations thereof, optionally including heteroatoms;

Z is $-C(R^3)_2-$ wherein each R^3 is independently a saturated or unsaturated aliphatic group, an aromatic group, or combinations thereof, optionally including heteroatoms, wherein the two R^3 groups within $-C(R^3)_2-$ can be optionally joined to form a ring;

each R is independently a saturated or unsaturated aliphatic group, an aromatic group, or combinations thereof, optionally including heteroatoms; and

V is $-O-Si(R)_2-$ or R^1.

2. The medical device of claim 1 wherein p = 1-5000.

3. The medical device of claim 2 wherein p = 2-12.

4. The medical device of claim 1 wherein R^1 and R^2 are each independently a straight chain alkylene group, an arylene group, or combinations thereof.

5. The medical device of claim 4 wherein R^1 and R^2 are each independently a straight chain alkylene group.

6. The medical device of claim 1 wherein R^1 and R^2 are each independently groups containing up to 100 carbon atoms.

7. The medical device of claim 6 wherein R^1 and R^2 are each independently groups containing up to 20 carbon atoms.

8. The medical device of claim 7 wherein R^1 and R^2 are each independently groups containing 2 to 20 carbon atoms.

9. The medical device of claim 1 wherein each R^3 is independently a straight chain alkyl group, an aryl group, or combinations thereof, optionally including heteroatoms.

10. The medical device of claim 9 wherein each R^3 is independently a straight chain alkyl group, optionally including heteroatoms.

11. The medical device of claim 10 wherein each R^3 is independently a straight chain alkyl group containing 1 to 20 carbon atoms.

12. The medical device of claim 1 wherein the polymer further comprises a urethane group, a urea group, or combinations thereof.

13. The medical device of claim 12 wherein the polymer comprises a segmented polyurethane.

14. The medical device of claim 1 wherein the polymer is a biomaterial.

15. The medical device of claim 14 wherein the polymer is substantially free of ether, ester, and carbonate linkages.

16. The medical device of claim 1 wherein the polymer is linear, branched, or crosslinked.

17. A medical device comprising a polymer prepared from a compound of the formula:

$$Y\text{-}[\text{-}(R^1)_n\text{-}(\text{-}Z\text{-}(R^2)_m\text{-})_p\text{-}(\text{-}Si(R)_2\text{-}V_r\text{-})_s\text{-}]_q\text{-}R^5\text{-}Y$$

wherein:

each Y is independently OH or NR^4H;

n = 0 or 1;

m = 0 or 1;

p = 1-100,000;

r = 0-100,000;

s = 1-100,000;

q = 1-100,000;

R^1, R^2, and R^5 are each independently a saturated or unsaturated aliphatic group, an aromatic group, or combinations thereof, optionally including heteroatoms;

Z is $-C(R^3)_2-$ wherein each R^3 is independently a saturated or unsaturated aliphatic group, an aromatic group, or combinations thereof, optionally including heteroatoms, wherein the two R^3 groups within $-C(R^3)_2-$ can be optionally joined to form a ring;

each R is independently a saturated or unsaturated aliphatic group, an aromatic group, or combinations thereof, optionally including heteroatoms;

each R^4 is independently H or a saturated or unsaturated aliphatic group, an aromatic group, or combinations thereof; and

V is $-O-Si(R)_2-$ or R^1.

18. The medical device of claim 17 wherein p = 1-100.

19. The medical device of claim 18 wherein p = 2-12.

20. The medical device of claim 17 wherein the number average molecular weight of the compound of the formula $Y-[-(R^1)_n-(-Z-(R^2)_m-)_p-(-Si(R)_2-V_r-)_s-]_q-R^5-Y$ is no greater than about 100,000 grams/mole.

21. The medical device of claim 20 wherein the number average molecular weight of the compound of the formula $Y-[-(R^1)_n-(-Z-(R^2)_m-)_p-(-Si(R)_2-V_r-)_s-]_q-R^5-Y$ is about 1000 grams/mole to about 1500 grams/mole.

22. The medical device of claim 17 wherein R^1 and R^2 are each independently a straight chain alkylene group, an arylene group, or combinations thereof.

23. The medical device of claim 22 wherein R^1 and R^2 are each independently a straight chain alkylene group.

24. The medical device of claim 17 wherein R^1 and R^2 are each independently groups containing up to 100 carbon atoms.

25. The medical device of claim 24 wherein R^1 and R^2 are each independently groups containing up to 20 carbon atoms.

26. The medical device of claim 25 wherein R^1 and R^2 are each independently groups containing 2 to 20 carbon atoms.

27. The medical device of claim 17 wherein each R^2 includes at least two carbon atoms.

28. The medical device of claim 17 wherein each R^3 is independently a straight chain alkyl group, an aryl group, or combinations thereof, optionally including heteroatoms.

29. The medical device of claim 28 wherein each R^3 is independently a straight chain alkyl group, optionally including heteroatoms.

30. The medical device of claim 29 wherein each R^3 is independently a straight chain alkyl group containing 1 to 20 carbon atoms.

31. The medical device of claim 17 wherein the polymer further comprises a urethane group, a urea group, or combinations thereof.

32. The medical device of claim 31 wherein the polymer comprises a segmented polyurethane.

33. The medical device of claim 17 wherein the polymer is a biomaterial.

34. The medical device of claim 33 wherein the polymer is substantially free of ether, ester, and carbonate linkages.

35. The medical device of claim 17 wherein each Y is OH.

36. The medical device of claim 17 wherein each R^4 is independently H or a straight chain alkyl group.

37. The medical device of claim 36 wherein each R^4 is independently a straight chain alkyl group containing 1 to 20 carbon atoms.

38. The medical device of claim 36 wherein each R^4 is H.

39. The medical device of claim 17 wherein the polymer is linear, branched, or crosslinked.

40. A polymer comprising a group of the formula:

$$-[-(R^1)_n-(-Z-(R^2)_m-)_p-(-Si(R)_2-V_r-)_s-]_q-$$

wherein:

n = 0 or 1;

m = 0 or 1;

p = 1-100,000;

r = 0-100,000;

s = 1-100,000;

q = 1-100,000;

R^1 and R^2 are each independently a saturated or unsaturated aliphatic group, an aromatic group, or combinations thereof, optionally including heteroatoms;

Z is $-C(R^3)_2-$ wherein each R^3 is independently a saturated or unsaturated aliphatic group, an aromatic group, or combinations thereof, optionally including heteroatoms, wherein the two R^3 groups within $-C(R^3)_2-$ can be optionally joined to form a ring;

each R is independently a saturated or unsaturated aliphatic group, an aromatic group, or combinations thereof, optionally including heteroatoms; and

V is $-O-Si(R)_2-$ or R^1.

41. The polymer of claim 40 wherein p = 1-5000.

42. The polymer of claim 40 wherein p = 2-12.

43. The polymer of claim 40 wherein R^1 and R^2 are each independently a straight chain alkylene group, an arylene group, or combinations thereof.

44. The polymer of claim 43 wherein R^1 and R^2 are each independently a straight chain alkylene group.

45. The polymer of claim 40 wherein R^1 and R^2 are each independently groups containing 2 to 20 carbon atoms.

46. The polymer of claim 40 wherein each R^3 is independently a straight chain alkyl group, an aryl group, or combinations thereof, optionally including heteroatoms.

47. The polymer of claim 46 wherein each R^3 is independently a straight chain alkyl group, optionally including heteroatoms.

48. The polymer of claim 47 wherein each R^3 is independently a straight chain alkyl group containing 1 to 20 carbon atoms.

49. The polymer of claim 40 which is linear, branched, or crosslinked.

50. A polymer comprising a urethane group, a urea group, or combinations thereof, and a group of the formula:

$$-[-(R^1)_n-(-Z-(R^2)_m-)_p-(-Si(R)_2-V_r-)_s-]_q-$$

wherein:

$n = 0$ or 1;

$m = 0$ or 1;

$p = 1$-100,000;

$r = 0$-100,000;

$s = 1$-100,000;

$q = 1$-100,000;

R^1 and R^2 are each independently a saturated or unsaturated aliphatic group, an aromatic group, or combinations thereof, optionally including heteroatoms;

Z is $-C(R^3)_2-$ wherein each R^3 is independently a saturated or unsaturated aliphatic group, an aromatic group, or combinations thereof, optionally including heteroatoms, wherein the two R^3 groups within $-C(R^3)_2-$ can be optionally joined to form a ring;

each R is independently a saturated or unsaturated aliphatic group, an aromatic group, or combinations thereof, optionally including heteroatoms; and

V is $-O-Si(R)_2-$ or R^1.

51. The polymer of claim 50 wherein p = 1-100.

52. The polymer of claim 51 wherein p = 2-12.

53. The polymer of claim 50 which is a segmented polyurethane.

54. The polymer of claim 50 which is a biomaterial.

55. The polymer of claim 54 which is substantially free of ether, ester, and carbonate linkages.

56. The polymer of claim 50 which is linear, branched, or crosslinked.

57. A polymer prepared from a compound of the formula:

$$Y-[-(R^1)_n-(-Z-(R^2)_m-)_p-(-Si(R)_2-V_r-)_s-]_q-R^5-Y$$

wherein:

each Y is independently OH or NR^4H;

n = 0 or 1;

m = 0 or 1;

p = 1-100,000;

r = 0-100,000;

s = 1-100,000;

q = 1-100,000;

R^1, R^2, and R^5 are each independently a saturated or unsaturated aliphatic group, an aromatic group, or combinations thereof, optionally including heteroatoms;

Z is $-C(R^3)_2-$ wherein each R^3 is independently a saturated or unsaturated aliphatic group, an aromatic group, or combinations thereof, optionally including heteroatoms, wherein the two R^3 groups within $-C(R^3)_2-$ can be optionally joined to form a ring;

each R is independently a saturated or unsaturated aliphatic group, an aromatic group, or combinations thereof, optionally including heteroatoms;

each R^4 is independently H or a saturated or unsaturated aliphatic group, an aromatic group, or combinations thereof; and

V is $-O-Si(R)_2-$ or R^1.

58. The polymer of claim 57 wherein p = 1-100.

59. The polymer of claim 58 wherein p = 2-12.

60. The polymer of claim 57 wherein the number average molecular weight of the compound of the formula $Y-[-(R^1)_n-(-Z-(R^2)_m-)_p-(-Si(R)_2-V_r-)_s-]_q-R^5-Y$ is no greater than about 100,000 grams/mole.

61. The polymer of claim 57 wherein R^1 and R^2 are each independently a straight chain alkylene group, an arylene group, or combinations thereof.

62. The polymer of claim 61 wherein R^1 and R^2 are each independently groups containing up to 100 carbon atoms.

63. The polymer of claim 62 wherein R^1 and R^2 are each independently groups containing up to 20 carbon atoms.

64. The polymer of claim 63 wherein R^1 and R^2 are each independently groups containing 2 to 20 carbon atoms.

65. The polymer of claim 57 wherein each R^2 includes at least two carbon atoms.

66. The polymer of claim 57 wherein each R^3 is independently a straight chain alkyl group, an aryl group, or combinations thereof, optionally including heteroatoms.

67. The polymer of claim 66 wherein each R^3 is independently a straight chain alkyl group containing 1 to 20 carbon atoms.

68. The polymer of claim 57 wherein each Y is OH.

69. The polymer of claim 57 wherein each R^4 is independently H or a straight chain alkyl group.

70. The polymer of claim 57 which is linear, branched, or crosslinked.

76. A method of making a polymer comprising a group of the formula

$$-[-(R^1)_n-(-Z-(R^2)_m-)_p-(-Si(R)_2-V_r-)_s-]_q-$$

the method comprising combining an organic compound containing two or more groups capable of reacting with hydroxyl or amine groups with a polymeric starting compound of the formula:

$$Y-[-(R^1)_n-(-Z-(R^2)_m-)_p-(-Si(R)_2-V_r-)_s-]_q-R^5-Y$$

wherein:

each Y is independently OH or NR^4H;

n = 0 or 1;

m = 0 or 1;

p = 1-100,000;

r = 0-100,000;

s = 1-100,000;

q = 1-100,000;

R^1, R^2, and R^5 are each independently a saturated or unsaturated aliphatic group, an aromatic group, or combinations thereof, optionally including heteroatoms;

Z is $-C(R^3)_2-$ wherein each R^3 is independently a saturated or unsaturated aliphatic group, an aromatic group, or combinations thereof, optionally including heteroatoms, wherein the two R^3 groups within $-C(R^3)_2-$ can be optionally joined to form a ring;

each R is independently a saturated or unsaturated aliphatic group, an aromatic group, or combinations thereof, optionally including heteroatoms;

each R^4 is independently H or a saturated or unsaturated aliphatic group, an aromatic group, or combinations thereof; and

V is $-O-Si(R)_2-$ or R^1.